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Indigenous Knowledge on Medicinal Plants Among the Local People of Puducherry Region (Union Territory), India

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Abstract

A survey on the use of medicinal plants by local traditional healers was carried out in Puducherry (Union Territory) region, southern India. Findings presented in this paper were gathered by group discussions, interviews and questionnaires with the local people having knowledge of medicinal values of plants; this study involved a total of 24 plant species distributed in 22 families. These medicinal plants employed by them are listed with Latin name, family, local name, parts used, mode of preparation of the drug and medicinal uses. Generally, fresh parts of the plants are used for the preparation of medicine and leaves are most commonly used. The results of this study showed that local people still depend on plants for the cure of certain diseases.

Keywords: Indigenous knowledge; Medicinal plants; Puducherry; south India.

Introduction

According to World Health Organization (WHO, about 65–80% of the world's population in developing countries, due to the poverty and lack of access to modern medicine, depended essentially on plants for their primary healthcare (Calixto, 2005). The primary benefits of using plant derived medicines are that they are relatively safer than synthetic alternatives offering profound therapeutic benefits and more economical (Iwu et al, 1999). Ethnic and indigenous people who reside in the forest and villages bordering the forest mainly depend on plant resources; and they possess rich knowledge on medicinal values of plants and their uses. This knowledge is passed orally from generation to generation (Ayyanar and Ignacimuthu, 2005).

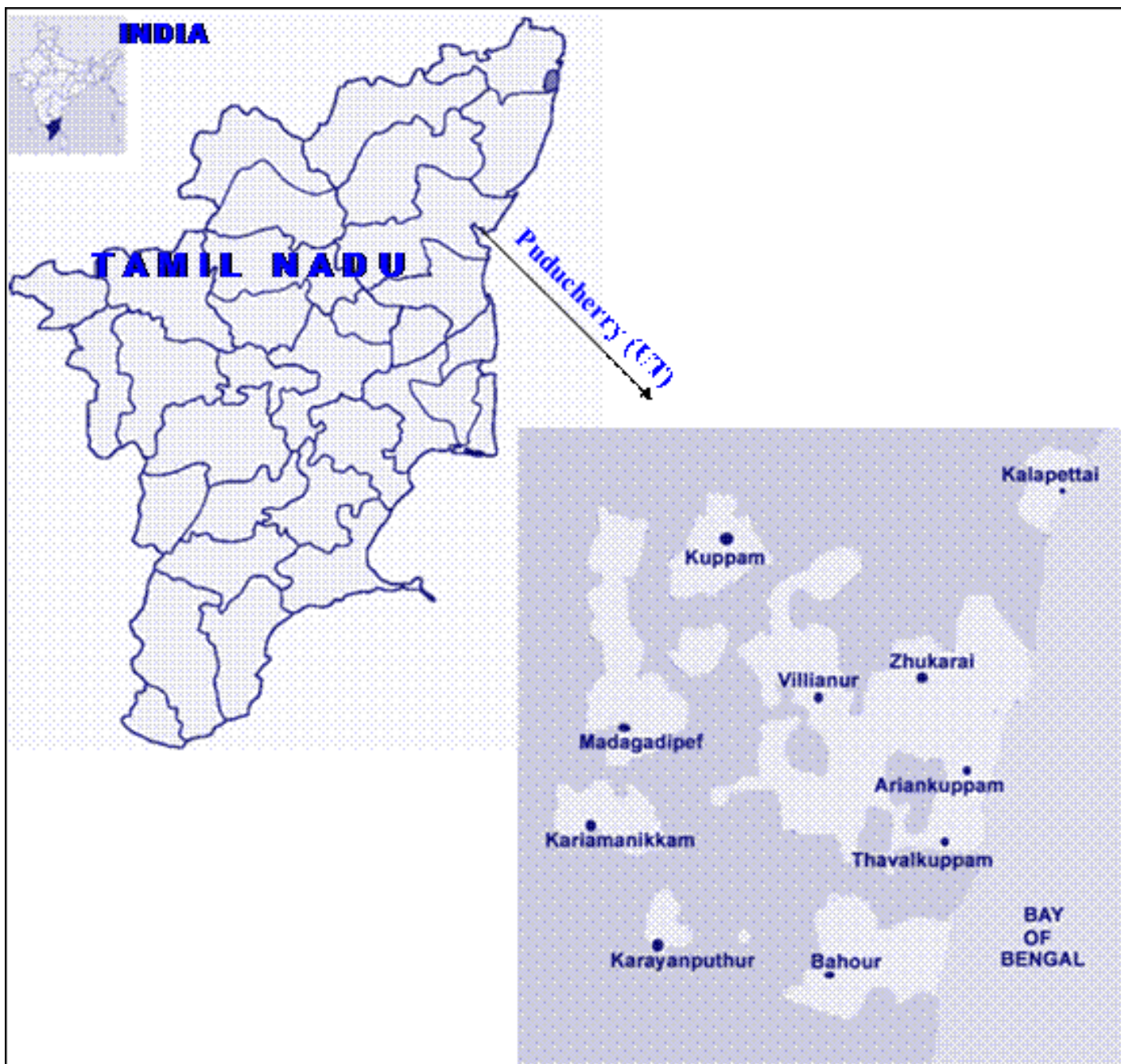
India is one of the twelve mega-biodiversity countries of the world having rich flora with a wide variety of plants. During the last few decades there has been an increasing interest in the study of plants as a source of medicine and their traditional uses in different parts of India (Ayyanar et al., 2008; Pattanaik et al., 2008; Teklehaymanot et al., 2006; Everest and Ozturk, 2005; Ghorbani, 2005; Ayyanar and Ignacimuthu, 2005; Lev and Amar, 2000; Katewa et al., 2004). There are many reports on the traditional use of plants for curing diseases either by tribal people or indigenous communities of India. In India, medicinal plants are widely used by all sections of the population and it has been estimated that over 7500 such species are used by several ethnic communities. In the present communication, we report the list of medicinal plants employed by local traditional healers who live in the villages of Puducherry region of India.

Methods

Study area

The Union Territory of Puducherry comprises four regions namely Puducherry, Karaikal, Mahe and Yanam, which are not geographically contiguous. Puducherry is located in the East Coast, about 162 kms. south of Chennai (Figure. 1). Puducherry is the largest among the four regions and consists of 12 scattered areas interspersed with enclaves of Villupuram and Cuddalore Districts of Tamil Nadu. The Union Territory of Puducherry is 479 square kilometer in area and has a population of 9,74,345 according to the 2001 census. The rural population is 3,25,726 persons (33.43%) whereas the urban population is 6,48,619 persons which constitute 66.57% of the total population (Puducherry Government website).

Figure 1. Map of Puducherry (Union Territory) region, south India.



Patches of tropical dry evergreen forests (TDEF) found in the coastal areas of Union Territory of Puducherry contain a great variety of medicinal plants which are used by the local traditional healers (Parthasarathy et al., 2008). Various types of soil found in the Union Territory include red loamy, coastal alluvium, delta alluvium, red laterite, deep black and red sandy. The mean maximum temperature is 38.2° C and mean minimum temperature is 24° C. North-East monsoon (September-December) is the major source of rainfall in the Union Territory.

Ethnobotanical survey

The local people having the indigenous knowledge of the medicinal plants were contacted through frequent field visits in various villages of Puducherry with the help of village head and local traders. Traditional healers from the villages of Periya Mudhaliar Chavadi, Poornankuppam, Embalam,

Seliamedu, Kanimedu and Kollumedu gave information regarding the medicinal plants used by them for the treatment of various diseases. The information was collected by group discussions and interviews with them in their local language (Tamil). Along with the medicinal uses, availability of the plants, local name, parts used, mode of preparation and mode of administration, dosage and ingredients added while preparing the medicine were documented in the field datasheets. Each plant species collected was given a voucher specimen number and was identified taxonomically using the floras such as Flora of Presidency of Madras (Gamble, 1936), Flora of Central Tamil Nadu (Matthew, 1991) and Flora of Tamil Nadu (Henry et al., 1983). The voucher specimens and documented indigenous knowledge were preserved at the Division of Biodiversity and Biotechnology, Post Graduate and Research Department of Botany, Pachaiyappa's College, Chennai – 30, Tamil Nadu.

Results and Discussion

A total of 24 medicinal plant species distributed in 22 families were collected from the study area with the help of traditional healers. Medicinal plants used by them are given below with Latin name, family, local name, parts used, mode of preparation and medicinal uses.

1. *Albizia lebbbeck* (L.) Willd., Mimosaceae, Vaagai maram. Dried bark is made into powder and used as tooth powder to get relief from dental problems.
2. *Mangifera indica* L. Anacardiaceae, Maa-maram. Ash that obtained from the burned leaf is mixed with coconut oil and applied on the wounds until cure.
3. *Citrus aurantifolia* (Christm.) Swingle, Rutaceae, Elumicchai. Juice of the fruit with few drops of pure honey is administered orally to get rid of from throat infection.
4. *Leucas aspera* (Willd.) Link., Lamiaceae, Thumbai. Powder thus obtained from shade dried flowers is mixed with sesame oil and applied topically on the forehead to get relive from headache.
5. *Moringa pterygosperma* Gaertn., Moringaceae, Murungai maram. Shade dried leaves are ground into powder and mixed with table salt. The mixture thus obtained is taken orally along with hot water to cure the diarrhoea.
6. *Aristolochia bracteolata* Lam., Aristolochiaceae, Aduthinna palai. Fresh leaves are ground in to a paste and mixed with butter milk and applied topically on the itches and rashes until cure.
7. *Sesbania grandiflora* (L.) Poir., Fabaceae, Agatthi. Juice of fresh leaves is mixed with coconut milk and the mixture thus obtained is applied topically on skin diseases until cure.
8. *Ferula asafoetida* H. Karst., Apiaceae, Perungayam. Asafoetida and dried ginger are mixed and ground in to a paste with water. The paste thus obtained is applied externally on the swellings

to get relieve from pain.

9. *Piper nigrum* L., Piperaceae, Milagu. Dried fruits are made into powder and applied topically on the fresh cuts and wounds until cure.

10. *Pandanus odoratissimus* L.f., Pandanaceae, Thaazhai. Few drops of juice thus obtained from the fresh leaves are poured in to the ear to get relief from earache.

11. *Phyllanthus amarus* Schum. & Thonn., Euphorbiaceae, Keezha nelli. Fresh leaves and dried rhizome of turmeric are mixed and ground into a paste and applied externally on the cracks on the foot until cure.

12. *Heliotropium indicum* L., Boraginaceae, Thel kodukku. Juice thus obtained from the fresh leaves is poured in to the eyes to get rid of from irritation.

13. *Tinospora cordifolia* Miers., Menispermaceae, Seenthil kodi. Shade dried leaves are ground into powder and mixed with hot water and the mixture is taken orally in the treatment of diabetes.

14. *Solanum torvum* Sw., Solanaceae, Sundai-kaai. Powder thus obtained from the shade dried leaves is mixed with hot water or cow's milk and administered orally to get relief from cold and cough.

15. *Hibiscus rosa-sinensis* L., Malvaceae, Semparutthi. Root is boiled with water and the decoction thus obtained is taken orally to cure throat infection.

16. *Andrographis paniculata* (Burm.f.) Wall. ex Nees., Acanthaceae, Nila vembu. The powder thus obtained from the shade dried leaves is mixed with hot water and taken orally to cure beetle bites.

17. *Allium cepa* L., Alliaceae, Vengayum. Juice thus obtained from the bulbs is applied topically on the cuts and wounds until cure.

18. *Trigonella foenum-graecum* L., Fabaceae, Vendhayum. Powder thus obtained from the seeds is mixed with pepper and rhizome of *Acorus calamus* and boiled with sesame oil. The mixture thus obtained is applied topically on the head to get rid of human louse.

19. *Thespesia populnea* (L.) Soland ex Correa., Malvaceae, Poovarasu. Powder thus obtained from the shade dried leaves is mixed with coconut oil and applied topically on the area of irritation and ring worm until cure.

20. *Mimusops elengi* L., Sapotaceae, Sapota. Leaves are boiled with water and the decoction thus obtained is used as a cleansing agent for mouth to cure diseases of the gums and teeth.

21. *Enicostemma littorale* Blume, Gentianaceae, Vellarugu. Powder of the shade dried leaves is mixed with hot water and taken orally to cure itches.
22. *Myristica fragrans* Houtt., Myristicaceae, Jathikaai. The dried fruit is ground into powder and mixed with castor oil and administered orally to cure stomach ulcer.
23. *Ichnocarpus frutescens* (L.) R.Br., Apocynaceae, Udarkodi. Latex of the plant is applied topically on painful tumours to reduce pain and retard growth.
24. *Psidium guajava* L., Myrtaceae, Koyya maram. Young leaf buds are ground into a paste and mixed with hot water. The mixture thus obtained is administered orally to cure diarrhoea.

To cure various diseases local traditional healers were using leaves (14) most commonly followed by fruit (3) and bark (1). This observation concurs the findings of the earlier investigators (Pattanaik et al., 2008; Everest and Ozturk, 2005; Ghorbani, 2005; Lev and Amar, 2000; Katewa et al., 2004). Mostly, fresh parts of the plants were used. Three plants were used for wound healing; two each to cure pain (tumor and muscle pain), throat infection, diarrhea, itches, wounds and skin diseases; one plant each to cure head ache, stomach ulcer, tumor, ear ache, foot cracks, eye pain, diabetes, cold and cough. Six species were found to be used alone without any additives while 18 plants were used with additives such as oil (sesame, castor and coconut), milk and milk products (butter milk and ghee), common salt, jaggery and honey.

Conclusion

The present study shows that to cure various ailments the local people who live near the forest habitats of the study area still depend on medicinal plants available in their environs. It is observed that the traditional acquisition of knowledge of medicinal uses of plants from previous generation decreased among present generations and alarmingly the traditional knowledge is very much lost or ignored. Hence, a need for detailed study and documentation of ethnobotanical knowledge possessed by local traditional healers is required before such valuable knowledge get lost for ever.

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